

AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated below. This listing of claims will replace all prior versions, and listings, of claims in the application.

Claim 1. (cancelled.)

Claim 2. (currently amended) The method of Claim 11 wherein, in the general formula for the copolymer, of Claim 1 wherein R_1 is NH_2 .

Claim 3. (cancelled.)

Claim 4. (currently amended) The method of Claim 11 wherein, in the general formula for the copolymer, of Claim 1 wherein Z is an integer having a value of from 2 to 3.

Claim 5. (currently amended) The copolymer method of Claim 4 wherein, in the general formula for the copolymer, Z is an integer having a value of from 2.

Claim 6. (currently amended) The copolymer method of Claim 5 wherein the copolymer has a molecular weight of from about 1,000,000 to about 6,000,000.

Claims 7-8. (cancelled).

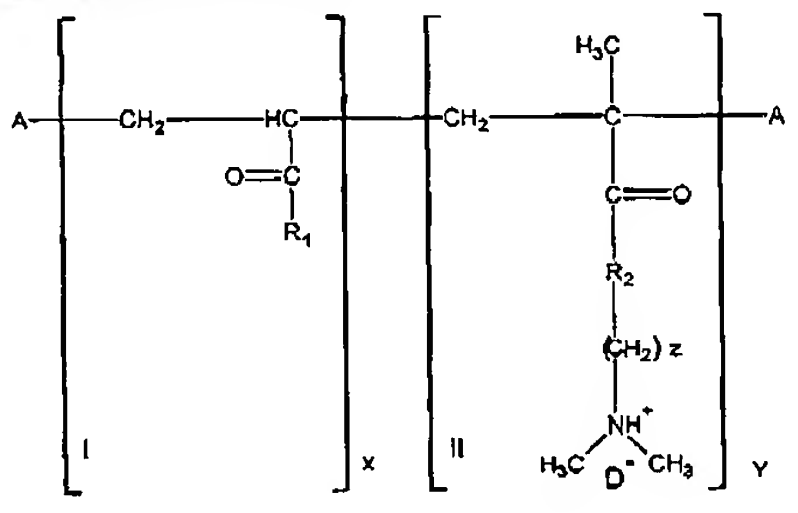
Claim 9. (currently amended) The gelled-acid method of Claim 7 11 wherein the mineral acid is selected from the group consisting of sulfuric, nitric, hydrochloric, and phosphoric acid.

Claim 10. (currently amended) The gelled-acid method of Claim 9 wherein the mineral acid is selected from the group consisting of sulfuric and hydrochloric acid.

Claim 11. (currently amended) A method for fracturing a subterranean formation, the subterranean formation being in fluid communication with the surface through a well bore, comprising:

(a) creating a fracture in a subterranean formation; and

(b) injecting into the fracture an etching agent, wherein the etching agent includes a gelled acid of ~~claim 7~~ comprising an acid gelled using a copolymer having a backbone, the organic component of the gelled acid having the general formula:



wherein:

(a) A is an H or other terminating group;

(b) R₁ is an OH or NH₂;

(c) R₂ is an O or NH;

(d) Z is an integer having a value of from 1 to 4;

(e) X and Y are present in a ratio (X:Y) of from 3:2 to 4:1;

(f) structures I and II are present as blocks or randomly distributed along the copolymer backbone;

(g) D⁻ is an anion of a mineral acid; and

wherein the copolymer has a molecular weight of from about 1,000,000 to about 10,000,000.

Claim 12. (currently amended) The method of Claim 11 wherein the etching agent includes an additive selected from the group consisting of emulsifiers, chelators, surfactants, proppants, delay additives, biocides, corrosion inhibitors, and mixtures thereof.

Claim 13. (original) The method of Claim 11 wherein the etching agent includes a proppant.

Claim 14 (cancelled).

15. (currently amended) The method of Claim 11 wherein the A-copolymer is prepared using a formulation useful for preparing copolymers useful for gelling acids comprising:

(a) a first vinyl component selected from the group consisting of acrylamide, acrylic acid, dimethylethyl acrylate, and mixtures thereof; and

(b) a second vinyl component selected from dimethylaminoethyl methacrylate, dimethylaminoethyl methacrylamide, dimethylaminopropyl methacrylamide, and mixtures thereof;

and additionally comprising a crosslinking agent.

16. (currently amended) The ~~copolymer formulation~~ method of Claim 15 wherein the crosslinking agent is bis-acrylamide.

17. (currently amended) The ~~copolymer formulation~~ method of Claim 16 wherein the bis-acrylamide is present in a concentration of less than about 250 parts per million.

18. (currently amended) The ~~copolymer formulation~~ method of Claim 16 wherein the bis-acrylamide is present in a concentration of less than about 200 parts per million.

19. (currently amended) The ~~copolymer formulation~~ method of Claim 16 wherein the bis-acrylamide is present in a concentration of less than about 100 parts per million.

20. (cancelled).